IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

AMPEX CORPORATION, *Plaintiff,* v. EASTMAN KODAK COMPANY, ALTEK CORPORATION, and CHINON INDUSTRIES, INC., *Defendants.*	)	C.A. No. 04-1373 (KAJ)

DECLARATION OF DR. DIETER PREUSS IN SUPPORT OF DEFENDANTS' ANSWERING BRIEFS TO AMPEX CORPORATION'S MOTIONS FOR SUMMARY JUDGMENT

1. I make this declaration in support of Defendants' Answering Briefs in Opposition to: (i) Ampex Corporation's Motion for Partial Summary Judgment that U.S. Patent No. 4,821,121 Is Not Anticipated; and (ii) Ampex Corporation's Motion for Partial Summary Judgment that U.S. Patent No. 4,821,121 Is Not Invalid For Obviousness.

2. I have been retained as an expert in this litigation by counsel for Defendants, Eastman Kodak Company ("Kodak") and Altek Corporation ("Altek").

3. I worked in the field of image processing for thirty-seven years, including as a professor researching image processing technology and a hardware development engineer.

4. I received a Masters Degree in Electrical Engineering from the Technical University of Braunschweig, Germany, in 1968. In 1976, I earned my Doctorate in Engineering. I wrote my dissertation on techniques and algorithms for data compression.

5. From 1968 to 1974, while I was earning my Doctorate degree, I taught as an Assistant Professor at the Technical University of Braunschweig in Germany. My work was focused on image data compression techniques.

6. From 1974 to 1977, I was an Assistant Professor at the Technical University of Hannover in Germany. At the Technical University of Hannover, I continued my research on image data compression techniques.

7. In 1978, I began working for Dr.–Ing. Rudolph Hell GmbH ("Hell") in Kiel, Germany. Hell was a company that specialized in prepress systems and image communication systems.

8. Prepress technology refers generally to the use of images, text, and graphics for the preparation of publication pages for magazines, books, advertisements, and other printed media. In the early 1980s, prepress systems allowed an operator to capture, edit, store, retrieve, and output the images used to compose pages of printed publications. Other systems used during this time period had similar image storage, editing, and retrieval capabilities. Electronic still store systems, for example, captured, manipulated, stored, and output images for use in television broadcast. Electronic still stores were also used in the prepress industry.

9. Between approximately 1978 and 1995, I worked at Hell and its successor companies as a hardware engineer. During this period, I worked on the development of digital signal processing and control units for image scanners and film recorders. I also worked on the design and development of prepress systems.

10. Among other systems, I worked on the development of the Hell Chromacom system. I was the head of the research and development department responsible for the design and development of the Chromacom's hardware.

11. As the director of research and development for the hardware of the Chromacom, I supervised the design of the hardware components of the Chromacom. I became familiar with the details of the structure, function, and operation of the components of the system.

12. During this period, I also became familiar with other prepress products that competed with the Chromacom. For example, I learned about the Scitex Response 300 system, which was another prepress system manufactured and sold in the late 1970s and 1980s. I observed the Response 300 system at trade shows throughout my time at Hell and received and reviewed product literature on the Response 300 system.

13. In 1989, I became the head of the research and development department responsible for research of new technologies at Hell. In 1990, Hell was purchased by Linotype AG to form Linotype-Hell AG. From 1989 until 1995, I worked with new technologies, including, for example, components for the successor to the Chromacom.

14. In 1997, Linotype-Hell AG was purchased by Heidelberger Druckmaschinen AG ("Heidelberger"). From 1995 until my retirement in December 2005 I worked as a patent solicitor for Linotype-Hell AG and then Heidelberger. As a patent solicitor, I drafted and filed patent applications. The patents I worked with related to prepress technology. I am listed as the inventor on two United States patents.

15. In this litigation, I expect to testify regarding my opinion that the asserted claims of the '121 patent are, under Ampex's interpretation of the term "video", invalid as anticipated by two prior art systems that were sold in the United States prior to April 8, 1982: the Hell Chromacom and Scitex Response 300 systems.

16. I also expect to testify regarding my opinion that, under the claim construction for "video" proposed by the Defendants, the asserted claims are invalid as obvious in light of the Chromacom in combination with other references that teach the "video" limitation, including the Quantel Paint Box and the Quantel (Digital Still Store Library System) DLS systems.

17. To the extent that a claim construction is asserted or adopted under which the Chromacom does not meet each element of the asserted claims, I expect to testify that the asserted claims would still have been obvious in view of a combination of the Chromacom with the Quantel Paint Box as well as the Quantel DLS. It is my opinion that it would have been obvious for one of ordinary skill in the art to combine the Chromacom with either of these two references. My Initial Expert Report in this action, dated March 24, 2006, summarizes my opinions.

I. The Hell Chromacom

18. Development of the Chromacom began in 1977. The Chromacom was sold in the United States in 1980. The system was demonstrated in multiple locations in the United States in 1981. As a result, I understand that the Chromacom is prior art to the '121 patent.

19. The Chromacom was described in papers presented by Hell engineers at conferences beginning in 1979. The features of the Chromacom were also described in articles in industry publications in 1980.

20. The Chromacom was a prepress and image processing system that could capture, store, edit, retrieve and display images and was used to arrange and edit publication pages.

21. I was responsible for the hardware design of the Chromacom. I supervised the team of engineers that developed the hardware of the Chromacom. I worked closely with the engineers that designed the software of the Chromacom.

22. The Chromacom consisted of up to three stations: the "Scan/Reco" station, the "Combiskop" station, and the "Final Page" station. The Scan/Reco station of the Chromacom accepted images that were input into the system by a scanner. The Combiskop station was the page make-up station where input images could be manipulated, stored, and displayed on a monitor and the final page could be computed. The Final Page station of the Chromacom was an optional station that provided increased capacity to compute completed images and publication pages for output as hard copy.

23. The components of the Chromacom included, among others, a computer at the Scan/Reco station; a computer (which included size reduction capability) at the Combiskop station; random access memory associated with the computers; disks at both the Scan/Reco station and the Combiskop station; a size reducer at the Scan/Reco station; random access memory associated with the size reducer in the Scan/Reco station; a display monitor at the Combiskop station; and two image memories (random access memory) at the Combiskop station.

24. The Chromacom received images from a scanner that was physically outside of the Chromacom system. The scanner was sold separately from the rest of the Chromacom system. The scanner inputs images to the Scan/Reco station of the Chromacom.

25. As of April 8, 1982, the Chromacom was designed for non-video images that were scanned into the system from a scanner because that was our customers' primary need. It would have been obvious, however, to connect a television camera to the Chromacom to input video images. There was an explicit motivation in the art to make this connection. Patents from the late 1970s describe the use of a television camera as an input to prepress products or systems. In addition, as early as 1976, Hell manufactured a color corrector called the "Chromascope" that accepted images input from a television camera and displayed the images on a television monitor. The Chromascope was used with the Chromacom and other prepress systems. Technical papers authored by Hell employees throughout the late 1970s and early 1980s describe the combination of the Chromascope with prepress systems, including the Chromacom.

26. The random access memory associated with the computers in the Scan/Reco station and the Combiskop station was used to store images before, during, and after they were processed by the computers. When an image was input into the Scan/Reco station from the scanner, it was transferred to the random access memory of the computer in the Scan/Reco station. The full size image could also be transferred to the Combiskop station of the Chromacom and could be stored in one of the image memories. Whenever the full size image was displayed, it was stored in an image memory. Each of the image memories had separate input and output ports. The full size image was also stored in the random access memory associated with the computer in the Combiskop station when it was transferred to the Combiskop computer for processing.

27. The Chromacom had multiple disks that could store image data. For example, the Scan/Reco station of the Chromacom had a disk that stored the full size image input from the scanner as well as a reduced size version of that image. The Combiskop station of the Chromacom also had disk storage for the full size image and reduced size images.

28. The operator of the Chromacom could, at his option, generate a reduced size version of the input full size image. A full size image in an image memory was transferred to the random access memory associated with the computer and then to the computer. The computer generated a reduced size version of the full size image and transferred it to the random access memory associated with the computer and then to an image memory for display. After the reduced size image was generated at the Combiskop station of the Chromacom, it could also be stored to disk.

29. Also in the Chromacom, a reduced size version of each full size image input was automatically generated at the Scan/Reco station. Each input full size image is transferred to the random access memory associated with the size reducer in the Scan/Reco station and then to the size reducer. This size reducer automatically generated a reduced size version of each input full size image. We sometimes referred to this reduced size image as the "coarse" or "view" resolution image in literature describing the Chromacom. This reduced size image was stored on disk at the Scan/Reco station along with the full size image input into the Chromacom.

30. Both the reduced size image generated at the Scan/Reco station and the reduced size image generated at the Combiskop could be generated from an input full size image and could therefore be reduced size versions corresponding to the full size image. In addition, the Chromacom saved every edit the operator made to a reduced size image. After editing was complete, the Chromacom applied those edits to the full size image.

31. When accessing images stored on disk at the Scan/Reco station, images were first transferred from the disk at the Scan/Reco station to the disk at the Combiskop station.

32. The operator of the Chromacom could select to transfer any image stored on disk at the Combiskop to an image memory for display. The full size image could be transferred from the disk to an image memory. The operator could also select to transfer a reduced size image or multiple reduced size images from disk to an image memory.

33. When the operator of the Chromacom recalled an image from the disk to one of the image memories in the Combiskop station, the image was transferred directly from the disk to the random access memory associated with the Combiskop computer and then could be transferred to one of the image memories. The computer of the Combiskop station of the Chromacom controlled the manipulation and transfer of images, including the transfer of the full or reduced size image from the disk to the random access memory of the computer and to an image memory.

34. The Chromacom could store full and reduced size images in random access memory at the same time. The Chromacom had two image memories in the Combiskop station. One image memory could store the full size image while the other image memory stored the reduced size image.

35. The Chromacom could retrieve multiple reduced size images, store the reduced size images in random access memory, and output the reduced size images as a mosaic. The Chromacom could generate multiple reduced size images, store the reduced size images to disk, retrieve the reduced size images from disk to the image memories for storage, and output the reduced size images for display as a mosaic. The Chromacom could also store a mosaic of reduced size images to disk, retrieve the mosaic from disk for storage in an image memory, and then output and display the mosaic.

36. One way a mosaic of reduced size images could be stored, retrieved and output for display was through the use of the Chromacom's replay mode. The replay mode allowed the operator, after completing a sequence of operations, to save the sequence of operations to disk and replay that sequence using a single command. Thus

an operator could create a "page" in image memory with multiple reduced size images, and the operations the operator used to create the page of multiple reduced size images could be saved and replayed such that the Chromacom would automatically load one reduced size image after another into the image memory.

37. Numerous documents describing the features and development of the Chromacom have been produced in this litigation. One such document is a December 13, 1982 article published in The Seybold Report entitled "The Hell Chromacom: A Tool for Today, a Vision for Tomorrow." This article describes amongst other features, the components of the Chromacom including, for example, the different stations, an external scanner to provide images into the system, two image memories, disk storage in the Scan/Reco and Combiskop stations, a computer in the Combiskop station. It further describes the ability of the Chromacom to generate reduced size images, the saving of full and reduced size images in RAM and disk, the access of images from disk for display and that the reduced size image corresponded to the full size image.

38. The October 9, 1979 publication in the Laser In Graphics Conference Proceedings entitled "The Chromacom Four Colour Electronic Page Makeup System: Today and the Future" describes, for example, the Combiskop station serving as a page make-up station that utilizes images recorded on a disk, the transfer of images from disk to an image memory, the use of one image memory to store original image data and the use of a second image memory to store manipulated image data, and the reduction of images in size upon scanning of an image.

39. The October 1980 article in the British Printer entitled "The Magic Paintbox" describes major prepress products from Hell and Scitex using a scanner "rather like a colour tv camera", the storage of full and "manipulated" (reduced in size) images to disk, and the Combiskop control unit.

40. A 1982 article in the Telcom Report entitled "Electronic Image Processing in Reprotechnology" describes among other things the Chromacom having disk storage, the storage of data to the disk post scanning of an image, the components and the ability of the Combiskop to perform page make-up functions that include size change, and the ability to display a reduced size image and multiple images on the screen at once.

41. A 1982 article in the Technical Association of the Graphic Art entitled "An Update on Laser Imaging for the Graphic Arts" describes, for example, the Chromacom system and its ability to, upon input, develop two files- one of which is the view/coarse file (reduced size image) and a fine file "which is representative of the full resolution of the image" and the ability of the Chromacom to apply the edits made to the reduced size image to the full size image automatically.

II. The Scitex Response 300

42. The Response 300 system was a prepress and image processing system that was manufactured by Scitex Corporation and that competed with the Chromacom in the late 1970s and early 1980s. Similar to the Chromacom, the Response 300 could capture, edit, store, retrieve, and display images.

43. I became familiar with the Response 300 in the late 1970s and early 1980s because it was directly competitive with the Chromacom. I learned the general system

architecture, features, and functions of the Response 300 in order to compare the Chromacom with the Response 300. I observed the Response 300 system in operation at trade shows throughout the 1980s. Other than the public demonstrations of the Response 300, I also observed a private demonstration of the Response 300 given to Hell employees at the GEC trade show in 1979. I also obtained and read product literature on the Response 300.

44. The Response 300 was introduced in 1979. The Response 300 was described in brochures released in 1979 and throughout the early 1980s. The Response 300 was sold in the United States beginning in 1979 and throughout the early 1980s. As a result, I understand that the Response 300 is prior art to the '121 patent.

45. The Response 300 consisted of at least an editing station, which included a display monitor, multiple computers, random access memory associated with the computers, and a multi-layered memory used to display images; multiple disk drives; and an optional output station to output images in hard copy.

46. The Response 300 was a modular and flexible system. To increase storage capacity, for example, additional disk drives could be included in the system. To increase processing capabilities, additional computers could be used with the system. The editing station of the Response 300 was also a modular subsystem. For instance, the Response 300 was first sold with the "CIPC" editing station. In 1981, customers could purchase the "Imager" editing station as part of the Response 300 system. Both the CIPC and Imager editing stations included a display monitor, computers, random access memory associated with the computers, and a memory used to display images.

47. Scitex used the "Response 300" label to refer to its complete line of Response 300 series systems, including the Response 310, Response 320, Response 330, and Response 350 systems. The functionality of the different configurations of the Response 300 series was identical for purposes of my analysis. The difference in the systems was the number of computers and disk drives used, and the particular editing station sold with the system.

48. The Response 300 received images from a scanner that was physically outside of the system. In the early 1980s, Scitex did not manufacture scanners, so Response 300 customers had to purchase scanners manufactured by other prepress companies, including Hell. The images that were input were available for storage and manipulation at the editing station.

49. As of April 8, 1982, the Response 300 was designed for non-video images that were scanned into the system from a scanner. It would have been obvious, however, to connect a television camera to the Response 300 to input video images. There was an explicit motivation to make this connection. Patents from the late 1970s describe the use of a television camera as an input to prepress products or systems. Scitex, like Hell, used television equipment with its prepress products. For example, the Response 300 used a television monitor to display images. Hell also used the "Chromascope," that accepted and displayed images input from a television camera, with prepress products such as the Chromacom. Technical papers throughout the late 1970s and early 1980s describe the combination of the Chromascope with prepress systems. The Chromascope could be used with the Response 300 system.

50. The Response 300 had random access memory, including a multi-layered memory at the editing station, and random access memory associated with the multiple computers of the system. The multi-layered memory had an input port and a separate output port and it was used to store images so that they could be displayed on the monitor at the editing station. Multiple images could be stored in the multi-layered memory at one time. This random access memory was the functional equivalent of a frame store that could store multiple images.

51. The Response 300 could store image data on disk. For instance, the input full size image could be stored on disk. Edited images could also be stored on disk.

52. When the full size image was input into the Response 300, it was transferred to the random access memory associated with one of the system's computers. Whenever the full size image was displayed, it was stored in the multi-layered memory. The full size image could also be stored in the random access memory associated with the computer of the Response 300 editing station when it was transferred to a computer for processing.

53. The operator of the Response 300 could, whenever he desired, generate a reduced size version of the input full size image. The ability of the Response 300 to selectively generate reduced size images allowed the operator to layout publication pages consisting of multiple images.

54. Reduced size images were selectively generated in a computer at the editing station. The full size image in the multi-layered memory was transferred to the random access memory associated with the computer. The computer generated a reduced

size image and transferred it to the random access memory associated with the computer and back to the multi-layered memory.

55. When a full size image was accessed into the multi-layered memory of the editing station, the Response 300 automatically generated a reduced size version of the full size image. This reduced size image was sometimes referred to as the "view file" or the "screen image."

56. The Response 300 could save any image, full size or reduced size, to disk. At any time, the operator could transfer the reduced size version of the full size image to disk for storage.

57. The Response 300 could selectively transfer either the full size image or reduced size images from the disk to random access memory. The Response 300 could recall any image stored on disk to the multi-layered memory for display. For instance, the operator of the Response 300 could select to transfer the full size image from disk to the multi-layered memory. The operator of the Response 300 could also select to transfer a reduced size image or multiple reduced size images from disk to the multi-layered memory.

58. When the Response 300 transferred an image from disk to the multi-layered memory for display or additional manipulation, the image was transferred directly from disk to the random access memory associated with the computer and then could be transferred to the multi-layered memory.

59. The multi-layered memory in the Response 300 could store multiple images at the same time. A full size image and a reduced size image could both be stored in the multi-layered memory at the same time.

60. The Response 300 could generate multiple reduced size images, store the reduced size images to disk, retrieve the reduced size images from disk to the multi-layered memory for storage, and output the reduced size images as a mosaic. The Response 300 could also save a mosaic of reduced size images to disk, retrieve the mosaic from disk for storage in the multi-layered memory, then output and display the mosaic.

61. Numerous documents describing the features and development of the Response 300 have also been produced in this litigation. One such document is a 1981 Scitex brochure entitled "Building Blocks for Growth – Scitex Response 300 Systems Configuration Guide" that describes the components of the Response 300 system and features such as image capture, the use of scanners, a large multi-layered micro-electronic memory that accommodates several pictures at once, disk storage, full and reduced size images in RAM and disk, and the generation of reduced size images using the interactive sizing ability of the system.

62. The 1981 Scitex brochure entitled "The IMAGER Console" describes the Imager Console having a high resolution color video display showing images being processed, the system including seven microcomputers, the operator having the ability to adjust the size of images, and the large multi-layered memory that stores multiple images.

63. The 1979 Scitex brochure entitled "Response 300" describes the storage of input images onto disk storage, the ability of the system to display images, the direct availability of the scanned images to the processing computer, the image manipulation performed by the mini-computer

III. Combination of the Chromacom with either the Quantel Paint Box or the Quantel DLS

64. To the extent that Ampex argues that the Chromacom cannot meet the elements of the asserted claims, it would have been obvious to one skilled in the art to combine the Chromacom with either the Quantel Paint Box or the Quantel DLS to meet the elements of the asserted claims. Both the prepress and television broadcast industries were closely related in that they worked with the capture, manipulation, storage, retrieval and display of images. As discussed above, the prepress industry often borrowed technology from the television broadcast industry. For example, Hell used television cameras with its prepress products. One of ordinary skill in the art confronted with the problem of developing a system that stored, manipulated and displayed digital images would have looked to both prepress and television broadcast technologies for solutions. I have reviewed the expert report of Richard Taylor. To the extent a claim construction is adopted under which the Chromacom does not meet all of the elements of the asserted claims, it is my opinion that a combination of the Chromacom with either the Quantel Paint Box or the Quantel DLS would render the asserted claims obvious.

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct.

Executed on June 13, 2006, in Mönkeberg, Germany

Dieter Preuss

Dieter Preuss

CERTIFICATE OF SERVICE

I hereby certify that on June 13, 2006, I electronically filed Declaration of Dr. Dieter Preuss in Support of Defendants' Answering Briefs to Ampex Corporation's Motions for Summary Judgment with the Clerk of the Court using CM/ECF which will send notification of such filing to the following:

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